



MLDS CENTER

Maryland Longitudinal
Data System

Better Data • Informed Choices • Improved Results

Expanding the
Understanding of High
School Non-Graduates
through a Comparison of
High School Dropouts
and Persisters in
Maryland

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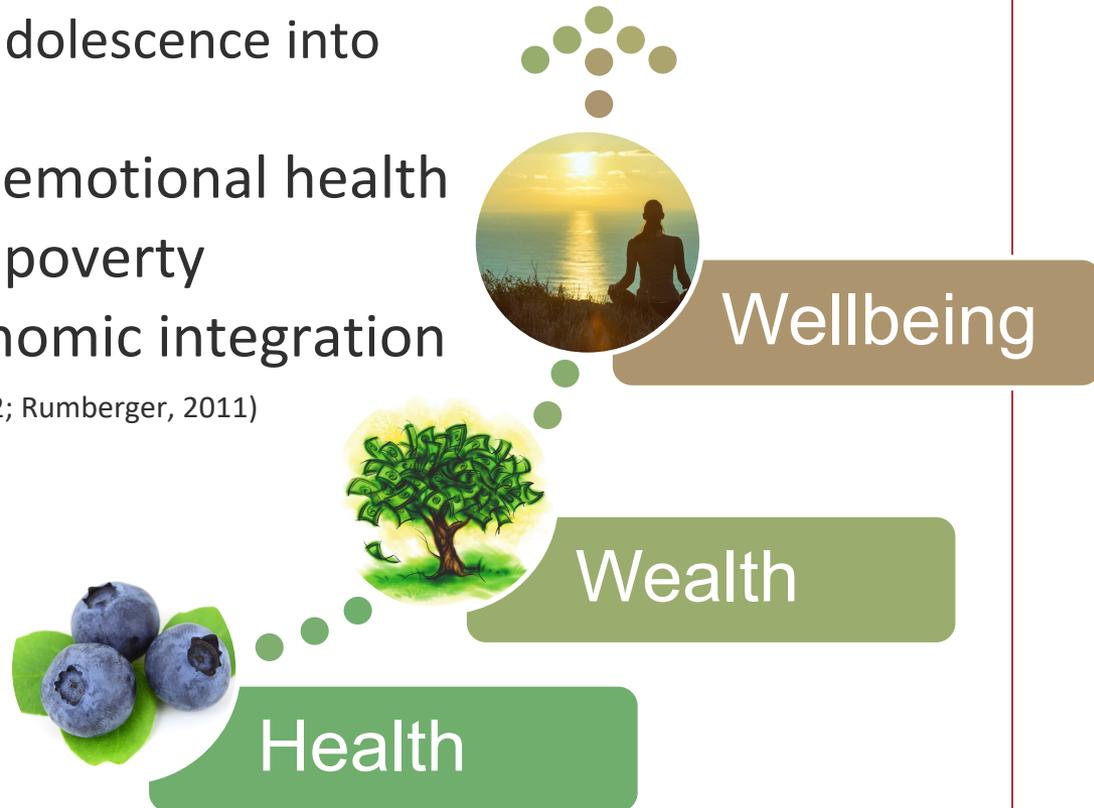
MLDS Research Series

November 4, 2021

Why high school graduation?

- High school graduation = **key social determinant**
 - Transition from adolescence into adulthood
 - ↑ physical and emotional health
 - ↓ likelihood of poverty
 - ↑ Social & economic integration

(Belfield et al., 2012; Rumberger, 2011)

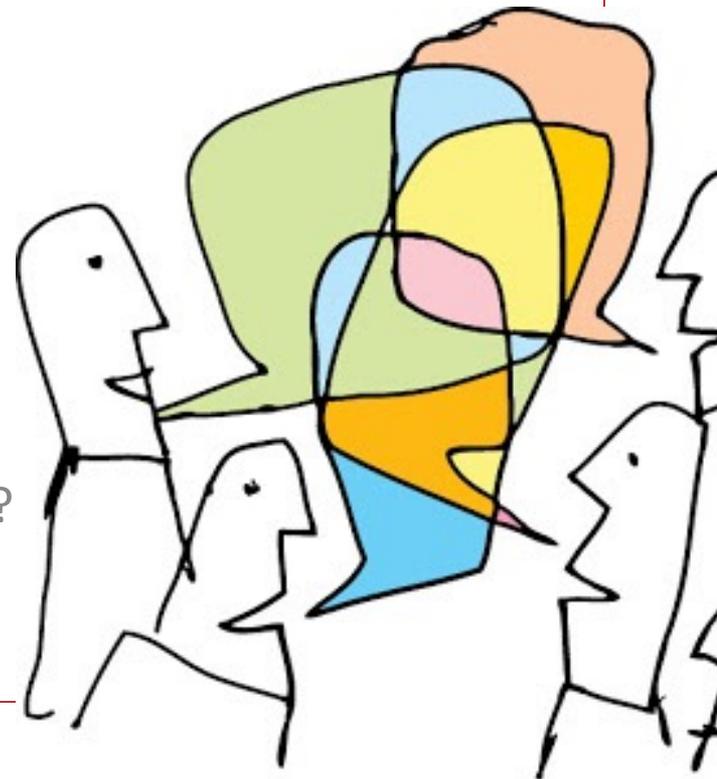


Background on High School Dropout

- Dropout is a process that unfolds over time
- Individual- and school-level factors contribute to the likelihood of dropout (e.g., Rumberger, 2011)
 - Attendance, standardized test scores, student motivation
 - School type, school resources
- Typology literature highlights “lost at the last minute” and “involved” dropouts (Bowers & Sprcott, 2012; Menzer & Hampel, 2009)
- Early warning systems attempt to identify these students early to intervene and promote graduation

Introduction and Background on Persisters

- Most studies focus on dropouts
 - Early warning indicators or
 - Typologies (e.g. pushouts, pullouts)
- Who is missing from the conversation?
 - What about students who do not dropout, but do not graduate on time?



Useful Definitions

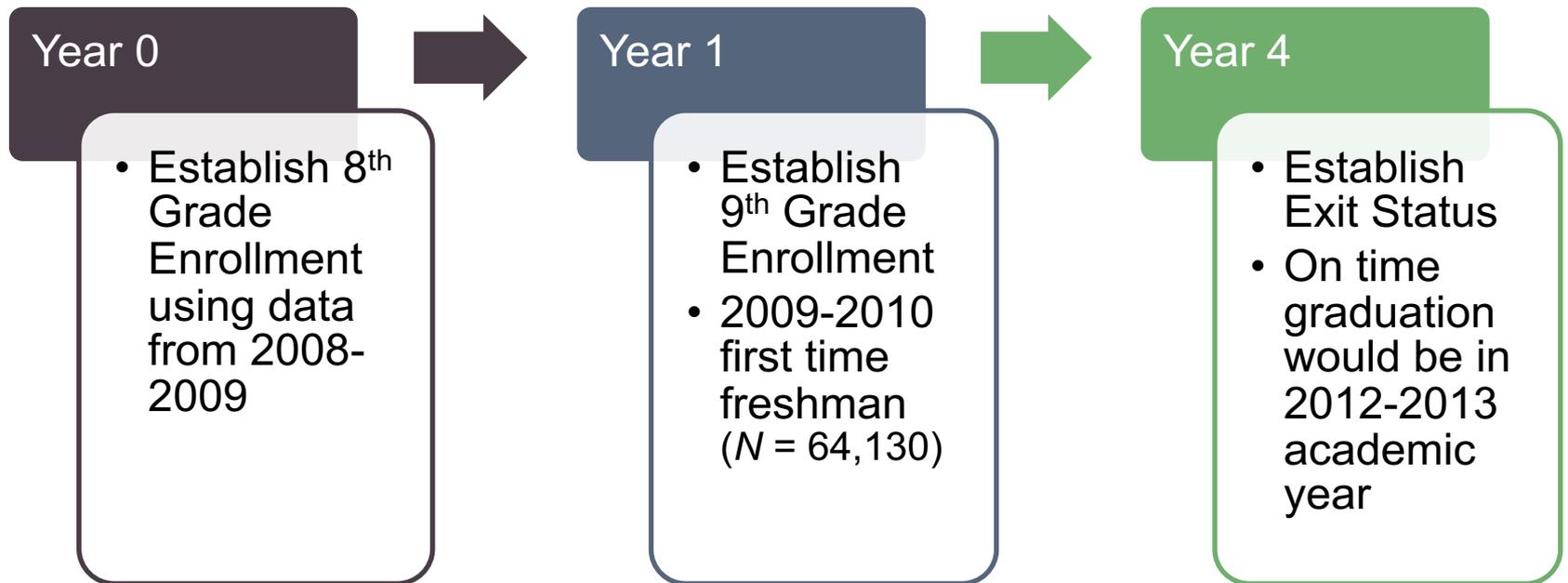
- ***On-time graduate*** – Students who graduate with a regular diploma four years after entering the ninth grade as first-time freshmen
- ***Dropout*** – Students who formally withdraw from school
- ***Persister*** – Students who do not earn a regular diploma but are still enrolled on their expected graduation date

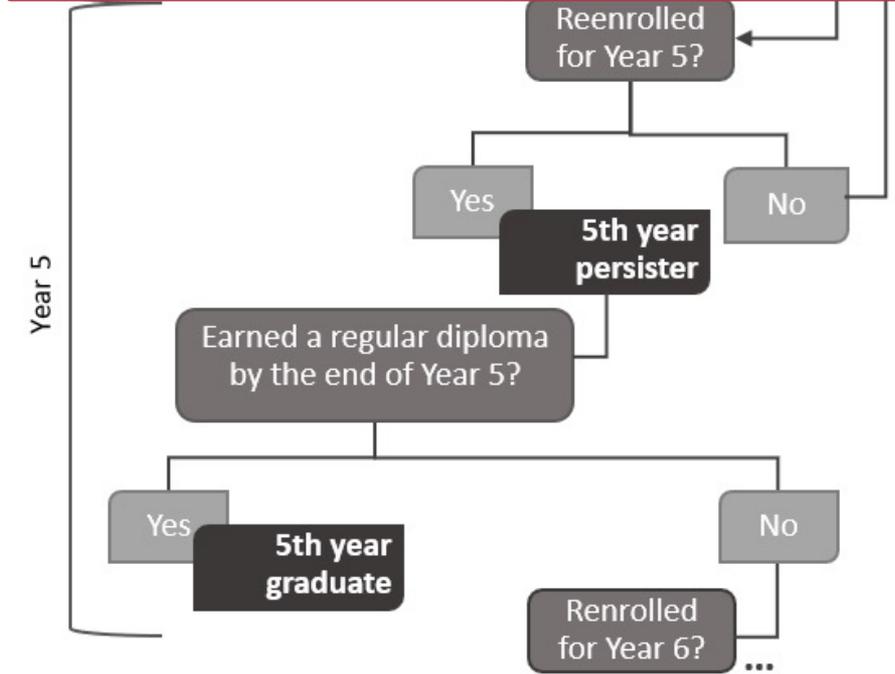
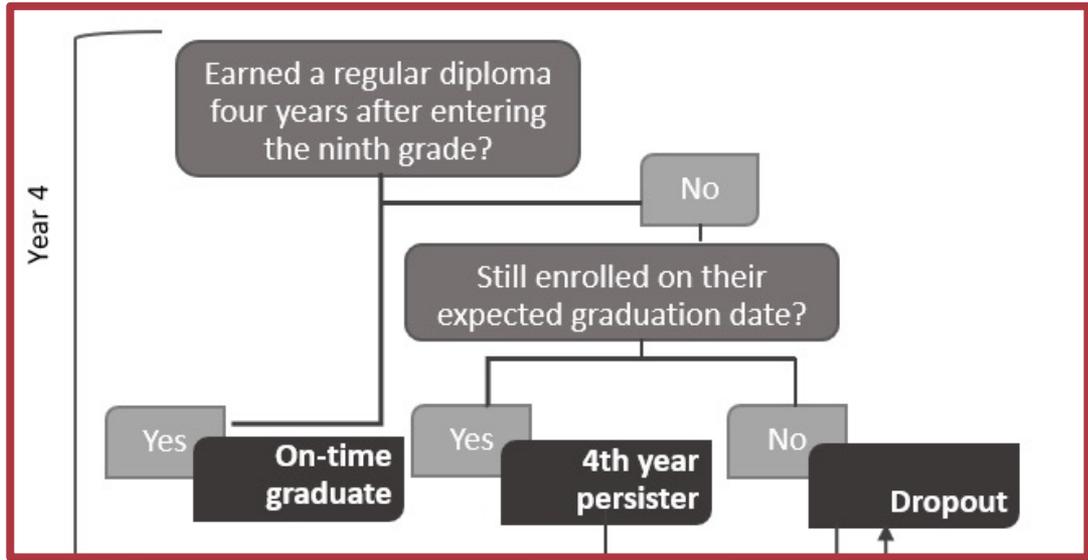
Research Questions

- What are the near-term (6-year) secondary, postsecondary, and workforce outcomes for persisters and dropouts?
- What academic and demographic characteristics help to differentiate persisters and dropouts?
- What are the longer-term (11-year) postsecondary and workforce outcomes for on-time graduates, late graduates, non-graduates, and GED earners?

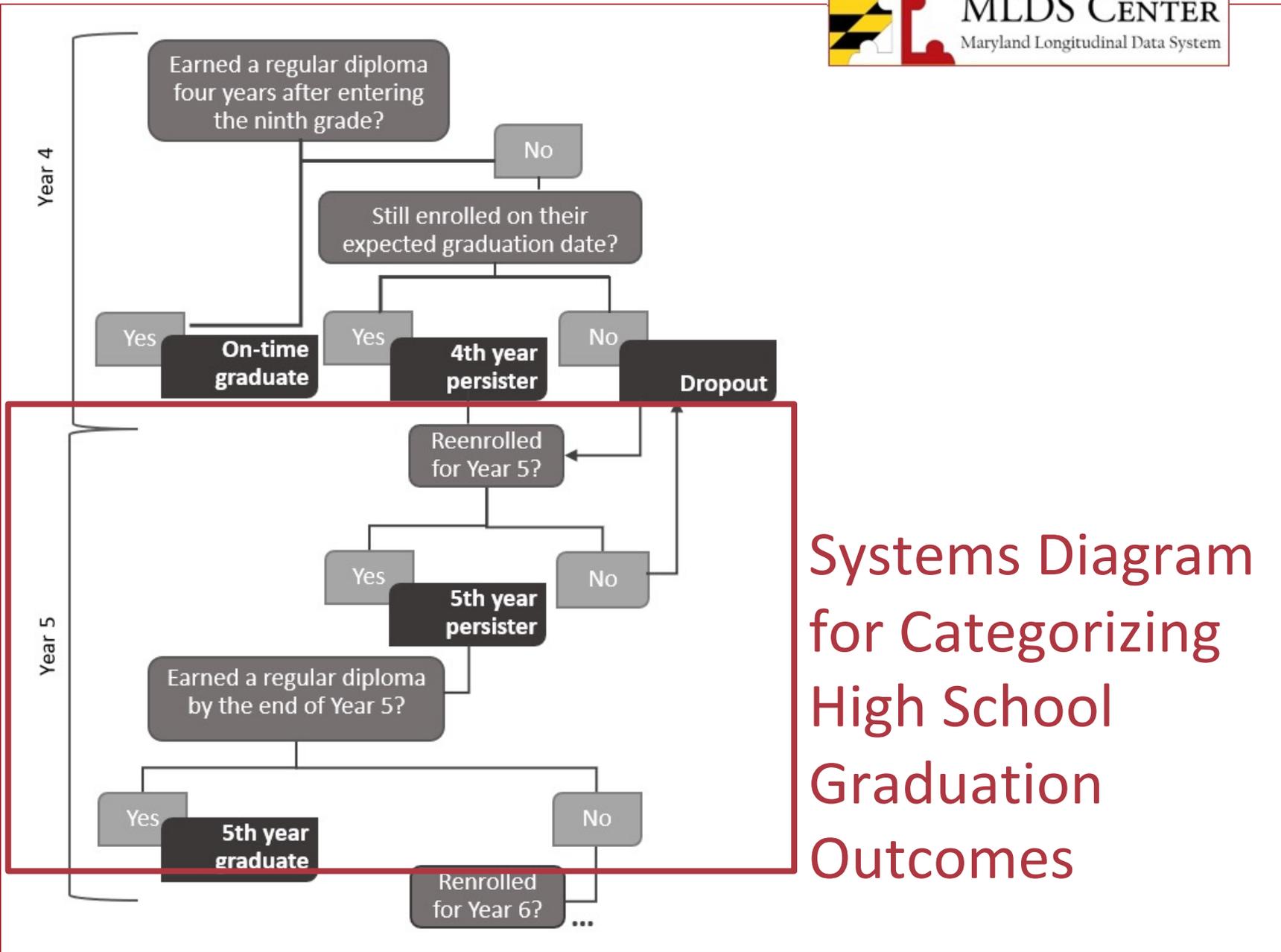
Methods

Identifying the MLDS Cohort

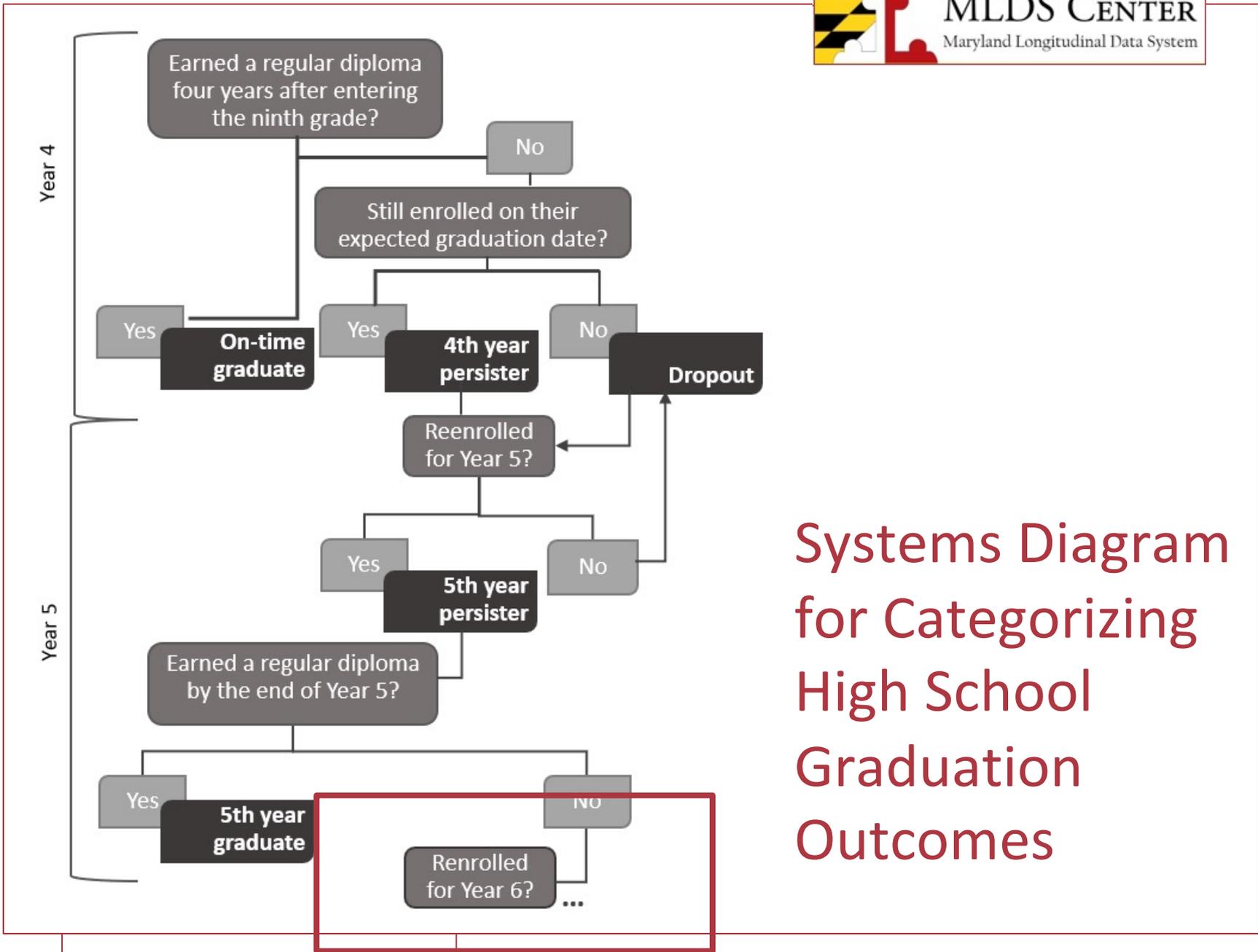




Systems Diagram for Categorizing High School Graduation Outcomes



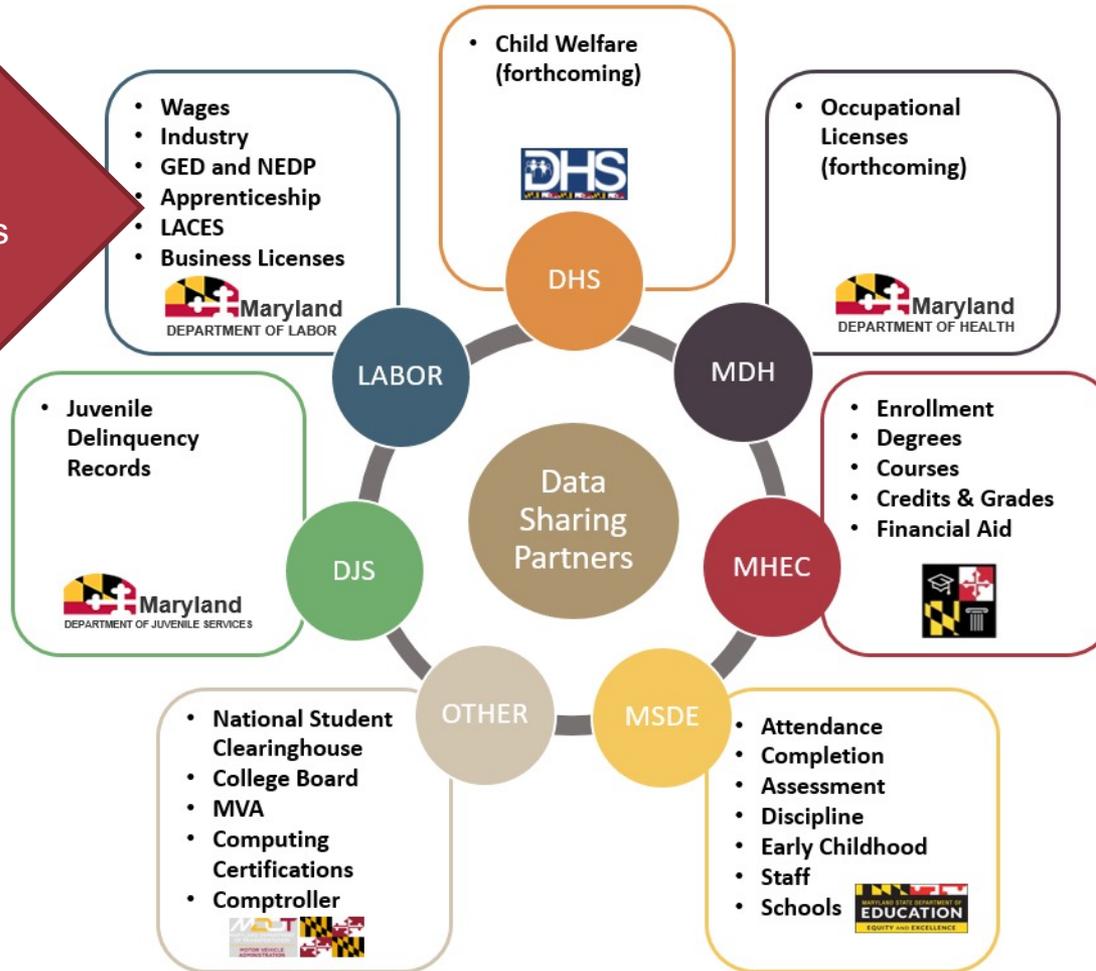
Systems Diagram for Categorizing High School Graduation Outcomes



Systems Diagram for Categorizing High School Graduation Outcomes

MLDS Data and Measures

Years 4-6; Year 11
Maryland workforce
yes/no; Annual wages



Years 4-6; Year 11
Enrollment yes/no
Degree yes/no

Analyses

- Descriptive statistics, including Sankey diagramming (Acquire Procurement Services, 2019)
- Multilevel modeling (Raudenbush & Bryk, 2002)
 - Logit link for binary outcomes
 - Random intercepts, fixed slopes
 - Group mean centered all predictors
 - Students nested in final year 4 enrollment
 - Indicators for LEA were added - one omitted

Results

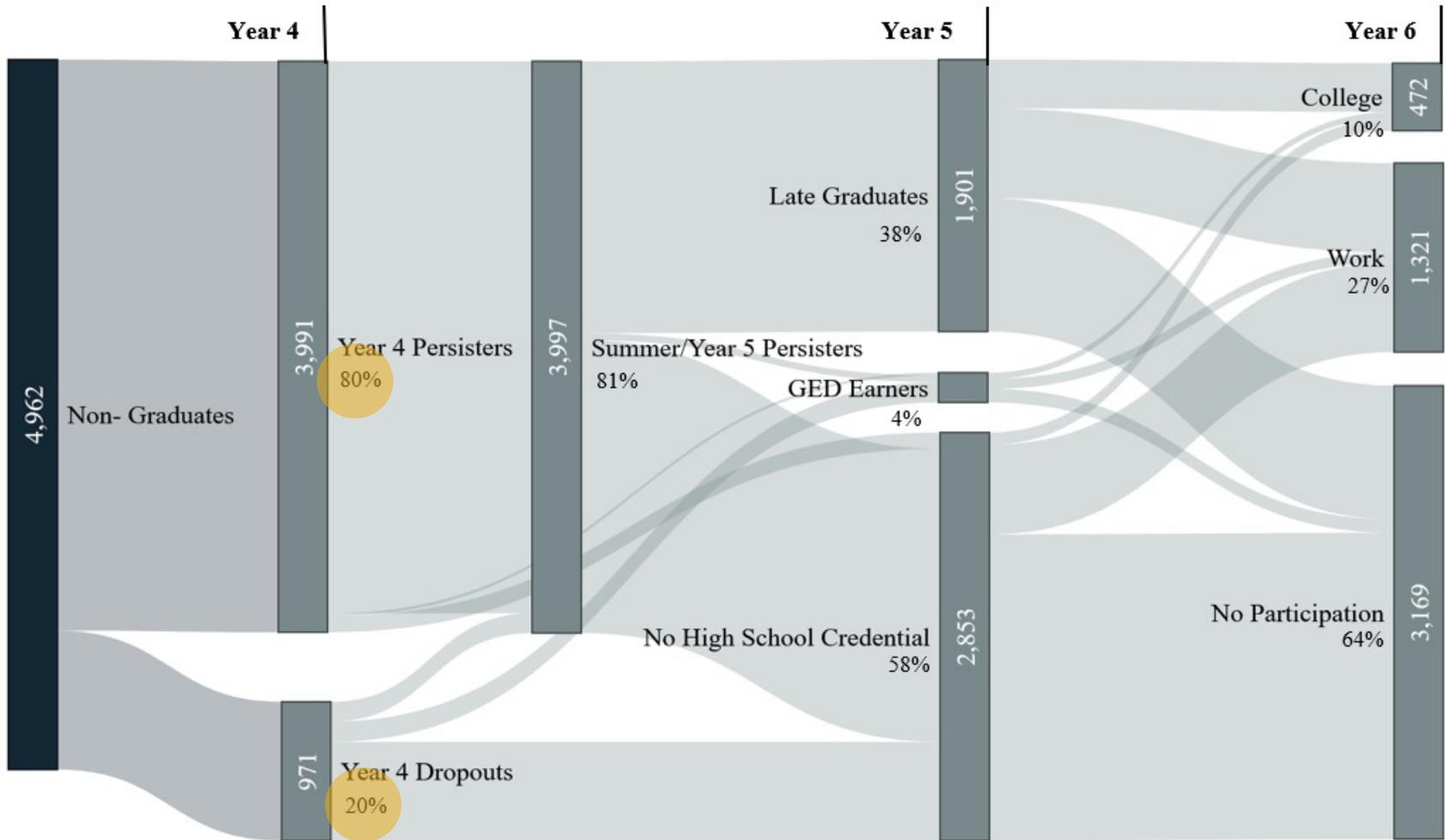
Descriptive Statistics in Year 4 ($N = 4,962$)

	4th Year Dropout	4th Year Persisters
	%	%
Total	20	80
Female	37	36
Race		
Black	48	64
White	36	21
Other	16	15
Latinx	17	15
English Language learner	5	5
Free and Reduced-priced Meals	76	77
Special Education	23	26
Prior Dropout	19	8
On Track	28	39



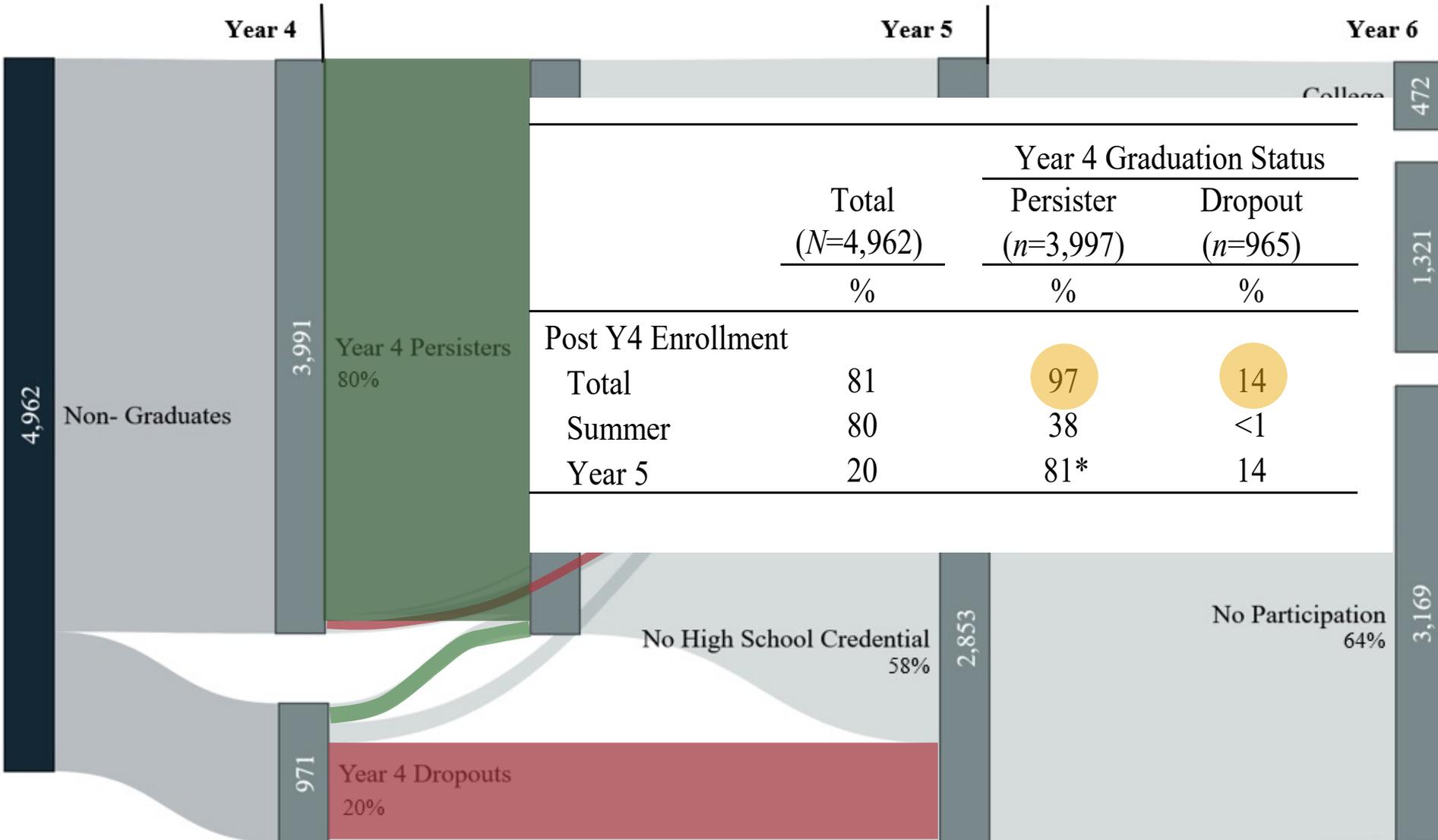


Sankey Diagram Years 4-6



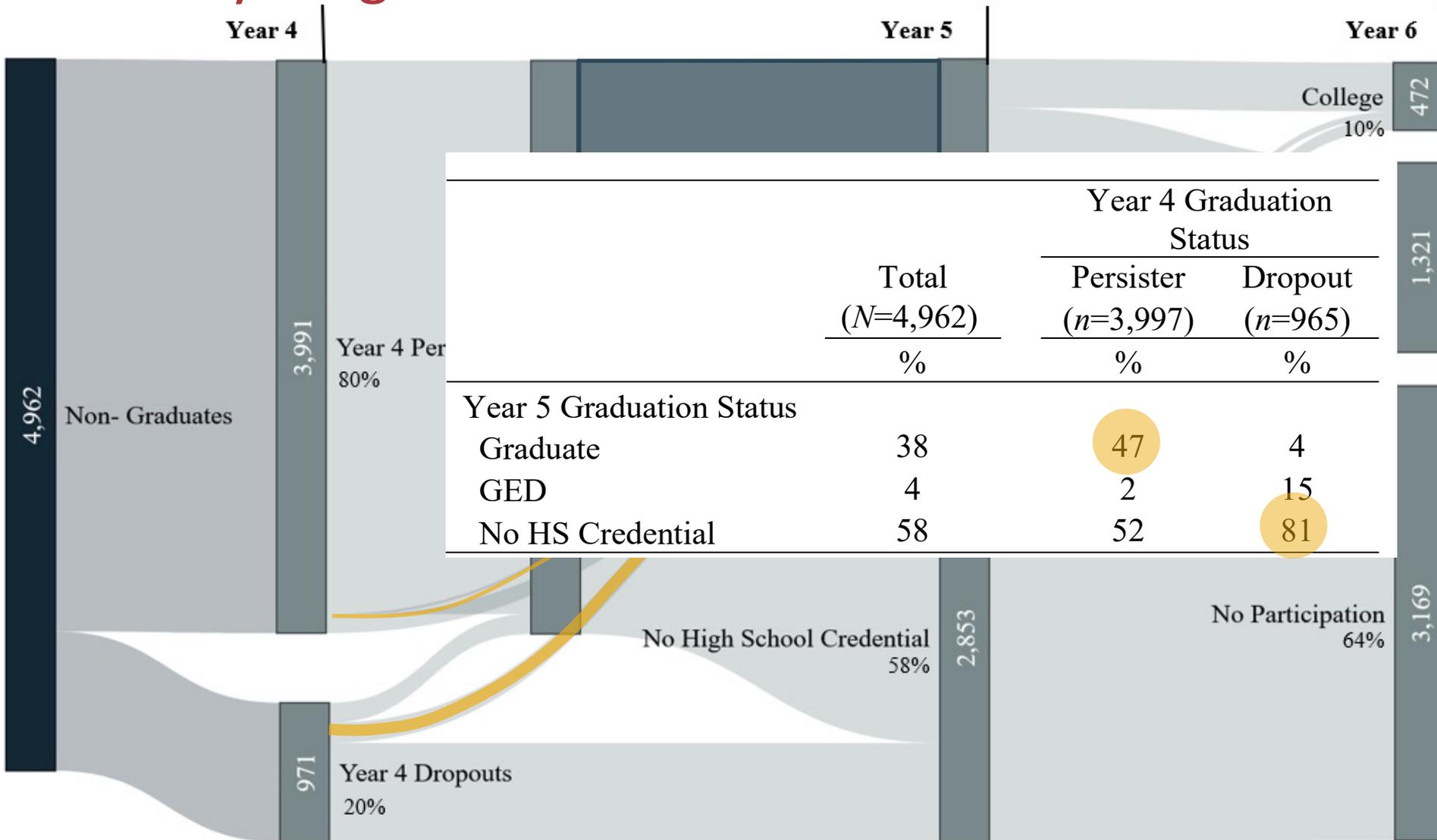


Sankey Diagram Years 4-6

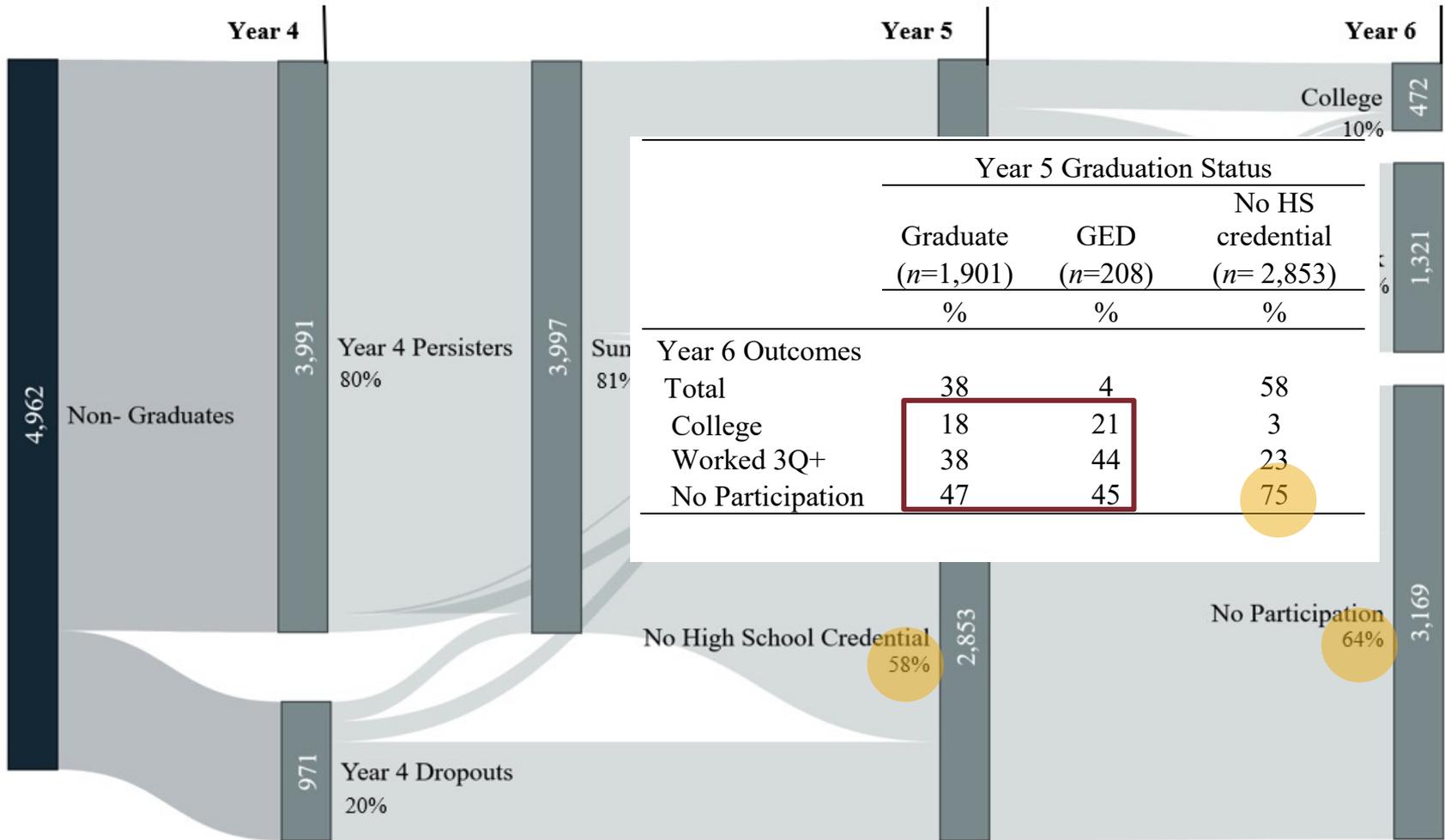


	Total (N=4,962)	Year 4 Graduation Status	
		Persister (n=3,997)	Dropout (n=965)
	%	%	%
Post Y4 Enrollment			
Total	81	97	14
Summer	80	38	<1
Year 5	20	81*	14

Sankey Diagram Years 4-6



Sankey Diagram Years 4-6



Odds of Persisting Versus Dropping out in the Fourth Year of High School ($N=4,895$)

Sig. Results

Level-1 Fixed Effects

- Black ↑
- Special Education ↑
- Pass English HSA ↑
- Dropped Out (Y1-3) ↓
- Off Track ↓
- Chronically Absent ↓

Level-2 Fixed Effects

- Voc-Tec School ↑
- Combined School ↑
- School Size ↑

Non-Sig. Results

Level-1 Fixed Effects

- Gender (Female)
- Other Race
- Latinx
- English Language Learner
- Free and Reduced Priced Meals
- Homeless
- Discipline

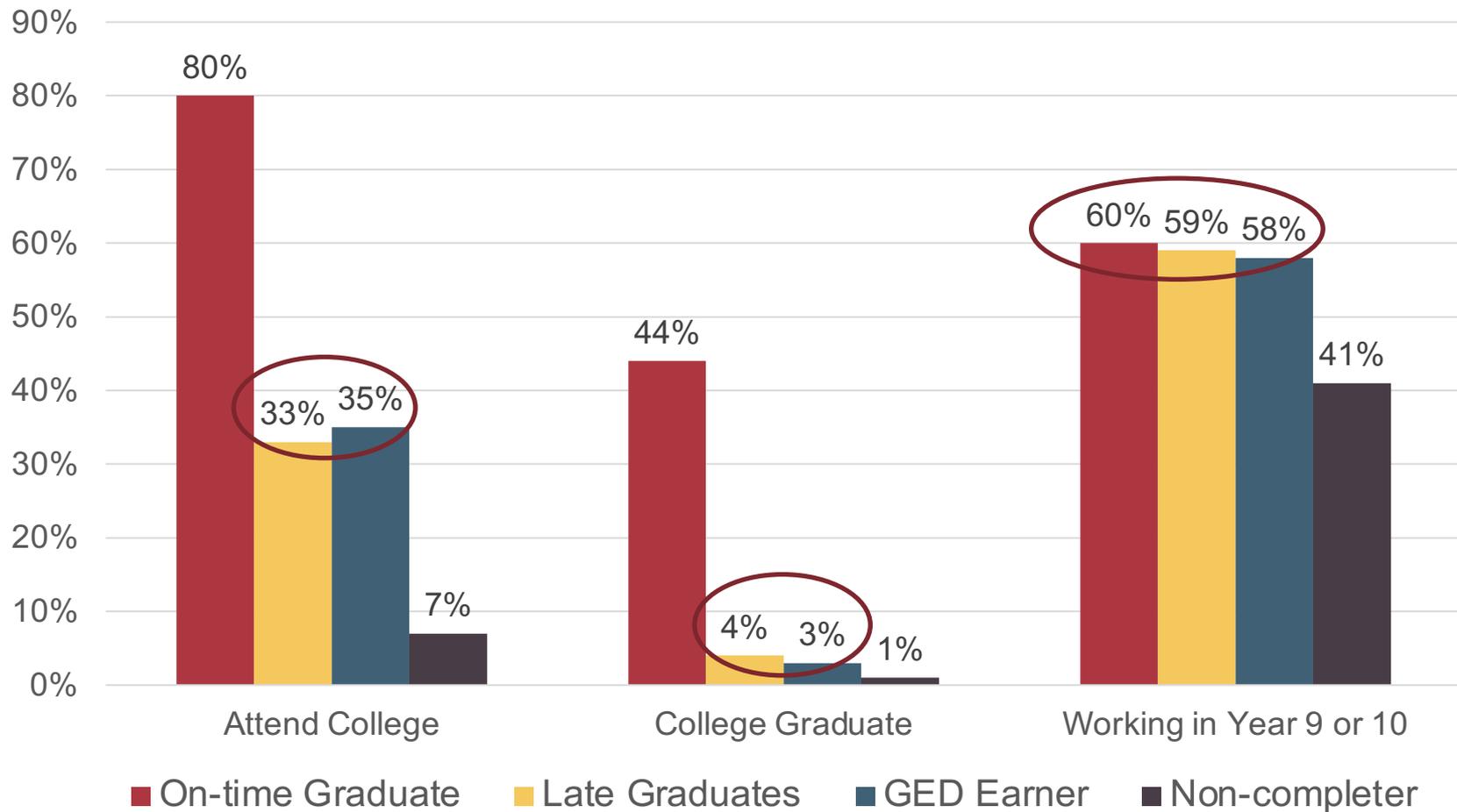
Level-2 Fixed Effects

- Alternative School
- Charter School

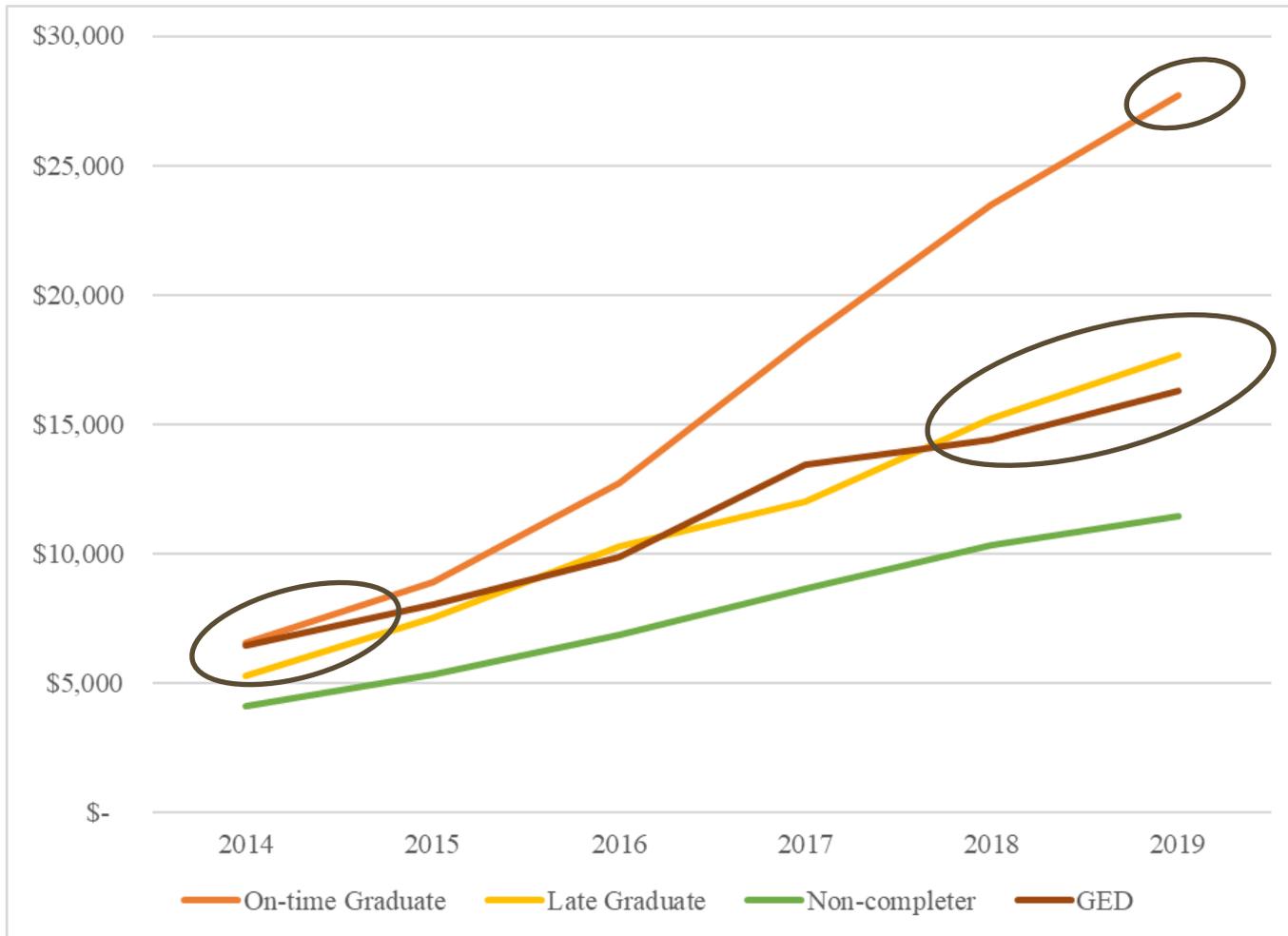
Descriptive Statistics by High School Achievement Type (N= 54,023)

	On-Time Graduate	GED Earner	Late Graduate	Non-Completer
	%	%	%	%
Total	84	2	4	9
Female	51	39	37	40
Race				
White	51	47	23	28
Black	33	38	61	59
Other	16	15	16	14
Hispanic	8	12	16	14
FARMS	36	62	72	75
Special Ed.	9	12	24	32

Postsecondary and Workforce Outcomes by High School Completion Status through Year 11 (N= 54,023)



Median Annual Wages by High School Completion Type Calendar Years 6-11



The Odds of Postsecondary and Workforce Outcomes 11 years after Freshman Year (N=54,023)

	Postsecondary		Workforce Participation
	Enrollment	Graduation	
On-Time Graduate	↑	↑	≈
GED	↑	≈	≈
Non-completer	↓	↓	↓

Note. Reference group is late graduates.

Summary, Limitations, and Implications

Summary

- Persisting students
 - Consistently outnumber dropouts (4:1 in Year 4)
 - Higher reenrollment (>7:1)
 - Higher Year 5 graduation rate (>12:1)
 - But > *half* have no HS credential – end of Year 5
- Postsecondary & Workforce Outcomes
 - On-time > late graduates & GED > Non-completers
 - *GED ≈ Late graduates*
 - *Value of GED? But there is a wage differential*
 - *Timing of GED attainment may matter*

Limitations

- Students who left the Maryland public school system are not included
- Maryland UI data do not include federal employees, private contractors, self-employment, or out of state employment
- Possibility of unmeasured confounders (e.g., student motivation)
- Timing of measurements in Years 4-11

Implications

- Considering persisting *alongside* dropout provides a more informative analysis of high school graduation
- Better identification and continued study of persisters
 - Increase high school graduation rates for persisters and dropouts
 - Promote a cascade of positive life outcomes
- Encouraging late graduating or GED earning may present viable alternatives
- Value of population-level linked longitudinal administrative data to identify rare populations

For More Information

- MLDS Center website

<https://mldscenter.maryland.gov/>

Questions and Contact

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